Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A ~~coil comprising~~ two dimensional antenna comprising:

a coil comprising:

a layer of permeable material ~~deposited~~ provided in a chip of an integrated circuit in a plane substantially parallel to a surface of a substrate of the chip,

a first conductor element arranged at a first side of the permeable material ~~(4)~~ facing away from the substrate,

a second conductor element arranged at a second side of the permeable material opposite to the first side, and

an interconnection for interconnecting a first end of the first conductor element and a first end of the second conductor element wherein the interconnection the first conductor element and the second conductor element are arranged for forming a winding around the permeable material, the winding extending in a plane substantially perpendicular to the surface of the substrate, and

a further coil comprising a conductor arranged around the layer of permeable material in a plane substantially parallel to the surface, wherein the layer of permeable material forms a core for both the first mentioned coil and the further coil.

2. (currently amended) A ~~coil~~ two-dimensional antenna as claimed in claim 1, wherein the first conductor element is part of the integrated circuit.

3. (withdrawn) A ~~coil~~ two-dimensional antenna as claimed in claim 2, wherein the first conductor element comprises a bond wire.

4. (withdrawn) A ~~coil~~ two-dimensional antenna as claimed in claim 2, wherein the first conductor element comprises a conductive track on the chip.

5. (currently amended) A ~~coil~~ two-dimensional antenna as claimed in claim 1, wherein the second conductor element comprises a conductive track on the chip and is arranged between the permeable material and the substrate.

6. (withdrawn) A ~~coil~~ two-dimensional antenna as claimed in claim 1, wherein the second conductor element comprises a conductive track arranged on a printed circuit board for carrying the integrated circuit.

7. (currently amended) A ~~coil~~ two-dimensional antenna as claimed in claim 1, wherein

a plurality of first conductor elements is arranged at a first side of the permeable material facing away from the surface of the substrate,

a plurality of second conductor elements is arranged at a second side of the permeable material opposite to the first side, and

a plurality of interconnections being arranged for interconnecting the plurality of first conductor elements and the plurality of second conductor elements in a chain, wherein the interconnections the first conductor elements and the second conductor elements are arranged for forming a winding around the permeable material for conducting current (i) in turns of the winding being substantially perpendicular to the surface.

8. (withdrawn) A ~~coil~~ two-dimensional antenna as claimed in claim 7, wherein the first conductor elements are arranged substantially in parallel.

9. (withdrawn) A ~~coil~~ two-dimensional antenna as claimed in claim 7, wherein the second conductor elements are arranged substantially in parallel.

10. (currently amended) A ~~coil~~ two-dimensional antenna as claimed in claim 1, wherein the coil, when energized, generates a magnetic field having a direction substantially parallel with the surface.

11. (currently amended) A ~~coil~~ two-dimensional antenna as claimed in claim 1, wherein the coil is arranged for being most sensitive for a magnetic field component having a direction parallel with the surface.

12. (currently amended) A two-dimensional antenna as claimed in claim 1, further comprising the chip and the integrated circuit. ~~An integrated circuit comprising:~~

~~the chip with a substrate the layer of permeable material deposited in the plane substantially parallel to the surface of the substrate and the first conductor element arranged at the first side of the permeable material facing away from the substrate~~

~~the second conductor element arranged at the second side of the permeable material opposite to the first side, and~~

~~the interconnection for interconnecting the first end of the first conductor and the first end of the second conductor element wherein the interconnection, the first conductor element and the second conductor element are arranged for forming the winding around the permeable material turns of the winding extending in a plane substantially perpendicular to the surface of the substrate to form a coil as claimed in claim 1.~~

13. (withdrawn) ~~An integrated circuit~~ A two-dimensional antenna as claimed in claim 12, wherein the chip further comprises:

the second conductor element being deposited on the substrate and

an isolating layer for isolating the second conductor element from the permeable material the permeable material being deposited as a layer on the isolating layer.

14. (withdrawn) ~~An integrated circuit~~ A two-dimensional antenna as claimed in claim 12, wherein the first conductor element comprises a bond wire.

15. (withdrawn) ~~An integrated circuit~~ A two-dimensional antenna as claimed in claim 12, wherein the first conductor element comprises a conductive track on the chip the chip further comprises an isolating layer arranged in-between the permeable material and the first conductor element.

16. (withdrawn) ~~An arrangement of an integrated circuit and a printed circuit board for forming a coil~~ A two-dimensional antenna as claimed in claim 1, wherein

the integrated circuit has at least one electrical conductive connection with the printed board

the chip comprises the layer of the permeable material

the first conductor element is arranged at a first side of the permeable material facing away from the substrate

the second conductor element is arranged on the printed circuit board and

the interconnection between the first conductor element and the second conductor element is made via the electrical conductive connection.

17. (currently amended) An electronic apparatus comprising a ~~coil~~ two-dimensional antenna as claimed in claim 1.

18. (withdrawn) An electronic apparatus as claimed in claim 17 being a tag.

19. (canceled)